

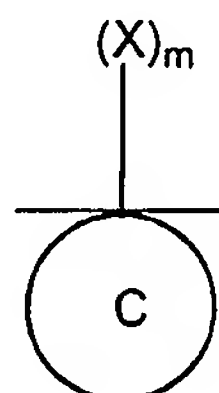
**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings of claims in the application:

**Listing of Claims:**

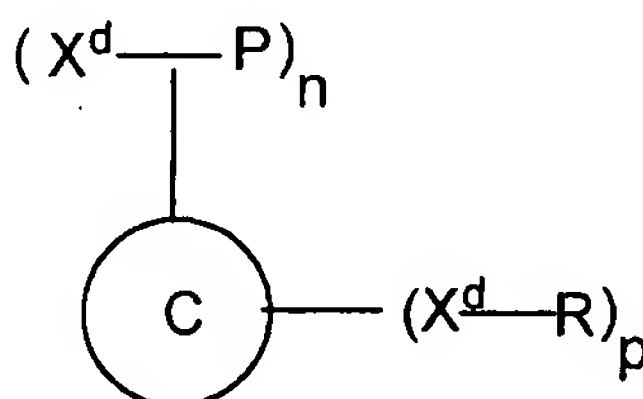
1-397. (Canceled)

398. (Currently Amended) ~~A conjugate comprising a peptide immunogen-protein/polypeptide carrier conjugate wherein the protein/polypeptide carrier has the formula:~~



wherein,

~~C is a protein/polypeptide carrier and X is a derivatizable functional group of an amino acid residue on the protein/polypeptide carrier or optionally of an amino acid residue of a peptide linker covalently attached to the protein/polypeptide carrier, and, wherein m is an integer greater than 0, but less than or equal to 85, and wherein the peptide immunogen-protein/polypeptide carrier conjugate has~~ An immunogenic conjugate having the formula:



wherein,

C is a CRM<sub>197</sub> protein/polypeptide carrier protein, ~~[[and]]~~

~~X<sup>d</sup> is a derivatized functional group of an amino acid residue of the protein/polypeptide carrier protein or optionally of an amino acid residue of a peptide linker covalently attached to the protein/polypeptide carrier, and, wherein,~~

P is a peptide immunogen comprising an A $\beta$  peptide fragment ~~or fragments of A $\beta$  or analogs thereof~~ covalently attached to the derivatized functional group of the amino acid residue of the protein-carrier protein ~~or optionally of an amino acid residue of a peptide linker covalently attached to a protein/polypeptide carrier,~~

R is a capping molecule covalently attached to the derivatized functional group of an amino acid residue of the protein/polypeptide-carrier protein, whereby ~~or optionally of an amino acid residue of a peptide linker covalently attached to a protein/polypeptide carrier, thereby~~ preserving the functionality of the carrier protein is preserved such that it retains its ability to elicit the desired immune responses against the peptide immunogen ~~comprising the A $\beta$  peptide or fragments of A $\beta$  or analogs thereof~~ that would otherwise not occur without a carrier,

n is an integer greater than 0, but less than or equal to 38[[85]], and

p is an integer greater than 0, but less than 38[[85]].

399-401. (Canceled)

402. (Currently Amended) The conjugate of claim 398[[401]], wherein the A $\beta$  fragment is selected from the group consisting of residues 1-3, 1-4, 1-5, 1-6, 1-7, 1-9, 1-10, 1-11, 1-12, 1-16, 1-28, 3-6, 3-7, 13-28, 15-24, 16-22, 16-23, 17-23, 17-24, 18-24, 18-25, 17-28, 25-35, 33-42, 35-40, and 35-42 of A $\beta$  (SEQ ID NO:21).

403. (Withdrawn) The conjugate of claim 402, wherein the A $\beta$  fragment is residues 1-7 of A $\beta$  (SEQ ID NO:21).

404-409. (Canceled)

410. (Currently Amended) An immunogenic composition, comprising an immunogenic conjugate ~~a conjugate of a peptide immunogen with a protein/polypeptide carrier generated by the method~~ of claim 398[[389]], together with one or more pharmaceutically acceptable excipients, diluents, and /or adjuvants.

411-413. (Canceled)

414. (Currently Amended) The immunogenic composition of claim 410[[413]], wherein the A $\beta$  fragment is selected from the group consisting of residues 1-3, 1-4, 1-5, 1-6, 1-7, 1-9, 1-10, 1-11, 1-12, 1-16, 1-28, 3-6, 3-7, 13-28, 15-24, 16-22, 16-23, 17-23, 17-24, 18-24, 18-25, 17-28, 25-35, 33-42, 35-40, and 35-42 of A $\beta$  (SEQ ID NO:21).

415. (Withdrawn) The immunogenic composition of claim 414, wherein the A $\beta$  fragment is residues 1-7 of A $\beta$  (SEQ ID NO:21).

416. (Previously Presented) The immunogenic composition of claim 410, wherein one or more adjuvants are selected from the group consisting of GM-CSF, 529 SE, IL-12, aluminum phosphate, aluminum hydroxide, *Mycobacterium tuberculosis*, *Bordetella pertussis*, bacterial lipopolysaccharides, aminoalkyl glucosamine phosphate compounds, MPL<sup>TM</sup> (3-O-deacylated monophosphoryl lipid A), a polypeptide, Quil A, STIMULON<sup>TM</sup> QS-21, a pertussis toxin (PT), an E. coli heat-labile toxin (LT), IL-1  $\alpha$ , IL-1  $\beta$ , IL-2, IL-4, IL-5, IL-6, IL-7, IL-8, IL-10, IL-13, IL-14, IL-15, IL-16, IL-17, IL-18, interferon-  $\alpha$ , interferon-  $\beta$ , interferon- $\gamma$ , G-CSF, TNF-  $\alpha$  and TNF- $\beta$ .

417-423. (Canceled)

424. (New) The immunogenic conjugate of claim 398, wherein the peptide immunogen further comprises a terminal cysteine residue and the peptide immunogen is covalently attached to the derivatized functional group of the amino acid residue of the carrier protein via the terminal cysteine residue.

425. (New) The immunogenic conjugate of claim 424, wherein the terminal cysteine residue is located at the carboxy-terminus of the A $\beta$  fragment.

426. (Withdrawn - New) The immunogenic conjugate of claim 424, wherein the terminal cysteine residue is located at the amino-terminus of the A $\beta$  fragment.

427. (New) The immunogenic conjugate of claim 425, wherein the A $\beta$  fragment is residues 1-7 of A $\beta$  (SEQ ID NO:21).

428. (Withdrawn - New) The immunogenic conjugate of claim 425, wherein the A $\beta$  fragment is residues 16-23 of A $\beta$  (SEQ ID NO:21).

429. (New) The immunogenic conjugate of claim 398, wherein the capping molecule is selected from the group consisting of an amino group, a hydroxyl group, a cysteamino group, an N-acetylcysteamino group, and an ethanolamino group.

430. (New) The immunogenic conjugate of claim 429, wherein the capping molecule is an N-acetylcysteamino group.

431. (New) The immunogenic conjugate of claim 398, wherein n is an integer greater than or equal to 5, but less than or equal to 25.

432. (New) The immunogenic conjugate of claim 431, wherein n is an integer greater than or equal to 12, but less than or equal to 20.

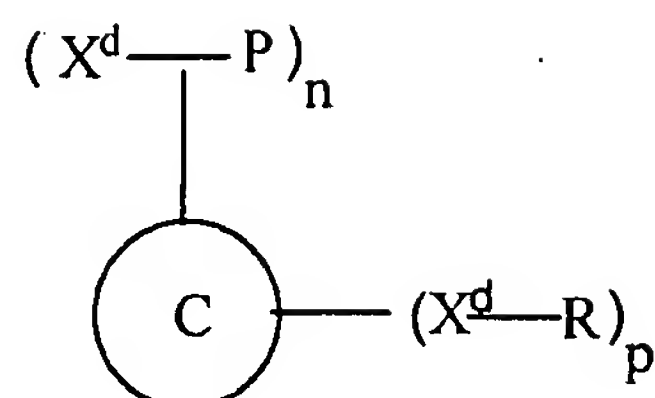
433. (New) The immunogenic conjugate of claim 427, wherein n is an integer greater than or equal to 12, but less than or equal to 15.

434. (New) The immunogenic conjugate of claim 433, wherein the capping molecule is an N-acetylcysteamino group.

435. (Withdrawn - New) The immunogenic conjugate of claim 428, wherein n is an integer greater than or equal to 12, but less than or equal to 15.

436. (Withdrawn - New) The immunogenic conjugate of claim 435, wherein the capping molecule is an N-acetylcysteamino group.

437. (New) An immunogenic conjugate having the formula:



wherein,

C is CRM<sub>197</sub>,

X<sup>d</sup> is a derivatized lysine residue of CRM<sub>197</sub>,

P is a peptide immunogen comprising residues 1-7 of Aβ (SEQ ID NO:21) and a C-terminal cysteine residue, wherein the peptide immunogen is covalently attached to the derivatized lysine residue via the C-terminal cysteine residue,

R is a capping molecule comprising N-acetylcysteamino covalently attached to the derivatized lysine residue of CRM<sub>197</sub>, whereby the functionality of the carrier protein is preserved such that it retains its ability to elicit a desired immune response against the peptide immunogen that would otherwise not occur without a carrier,

n is an integer greater than 0, but less than or equal to 38, and

p is an integer greater than 0, but less than or equal to 38.

438. (New) The immunogenic conjugate of claim 437, wherein n is an integer greater than or equal to 5, but less than or equal to 25.

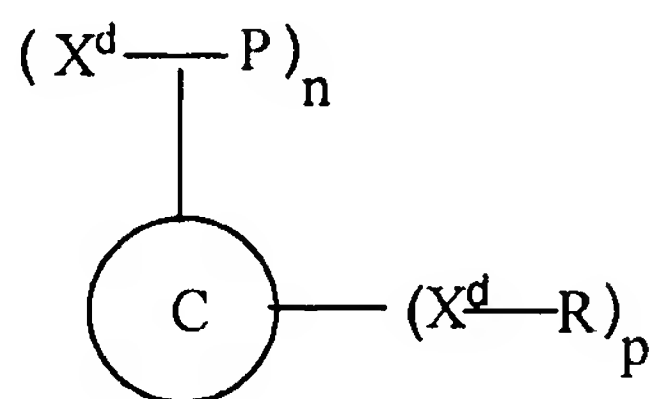
439. (New) The immunogenic conjugate of claim 438, wherein n is an integer greater than or equal to 12, but less than or equal to 15.

440. (New) The immunogenic conjugate of claim 439, wherein n is 12.

441. (New) The immunogenic conjugate of claim 439, wherein n is 14.

442. (New) The immunogenic conjugate of claim 439, wherein the peptide immunogen is DAEFRHD-C.

443. (Withdrawn - New) An immunogenic conjugate having the formula:



wherein,

C is CRM<sub>197</sub>,

X<sup>d</sup> is a derivatized lysine residue of CRM<sub>197</sub>,

P is a peptide immunogen comprising residues 16-23 of Aβ (SEQ ID NO:21) and a C-terminal cysteine residue, wherein the peptide immunogen is covalently attached to the derivatized lysine residue via the C-terminal cysteine residue,

R is a capping molecule comprising N-acetylcysteamino covalently attached to the derivatized lysine residue of CRM<sub>197</sub>, whereby the functionality of the carrier protein is preserved such that it retains its ability to elicit a desired immune response against the peptide immunogen that would otherwise not occur without a carrier,

n is an integer greater than 0, but less than or equal to 38, and

p is an integer greater than 0, but less than or equal to 38.

444. (Withdrawn - New) The immunogenic conjugate of claim 443, wherein n is an integer greater than or equal to 5, but less than or equal to 25.

445. (Withdrawn - New) The immunogenic conjugate of claim 444, wherein n is an integer greater than or equal to 12, but less than or equal to 15.

446. (Withdrawn - New) The immunogenic conjugate of claim 445, wherein the peptide immunogen is KLVFFAED-C.

447. (Withdrawn - New) The immunogenic composition of claim 414, wherein the Aβ fragment is residues 16-23 of Aβ (SEQ ID NO:21).